

Electron Configuration Practice Worksheet

In the space below, write the unabbreviated electron configurations of the following elements:

- 1) sodium $1s^2 2s^2 2p^6 3s^1$
- 2) iron $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$
- 3) bromine $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^5$
- 4) barium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2$
- 5) neptunium $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10} 6p^6 7s^2 6d^1 5f^4$

In the space below, write the abbreviated electron configurations of the following elements:

- 6) cobalt $[Ar] 4s^2 3d^7$
- 7) silver $[Kr] 5s^1 4d^{10}$
- 8) tellurium $[Kr] 5s^2 4d^{10} 5p^4$
- 9) radium $[Rn] 7s^2$
- 10) lawrencium $[Rn] 7s^2 6d^1 5f^{14}$

Determine what elements are denoted by the following electron configurations:

- 11) $1s^2 2s^2 2p^6 3s^2 3p^4$ Sulfur (S)
- 12) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$ Rubidium (Rb)
- 13) $[Kr] 5s^2 4d^{10} 5p^3$ Antimony (Sb)
- 14) $[Xe] 6s^2 4f^{14} 5d^6$ Rhenium (Re)
- 15) $[Rn] 7s^2 5f^{11}$ Einsteinium (Es)

Determine which of the following electron configurations are not valid:

- 16) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^{10} 4p^5$ not valid $4d^{10} \rightarrow$ should be $3d^{10}$
- 17) $1s^2 2s^2 2p^6 3s^3 3d^5$ not valid $3s^3 \rightarrow$ only 2 electrons/s orbital
- 18) $[Ra] 7s^2 5f^8$ probably not valid... missing 6d
- 19) $[Kr] 5s^2 4d^{10} 5p^5$ valid - Iodine
- 20) $[Xe]$ Valid - Xenon